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NOTES ON ORCHIDS OF THE AMERICAN TROPICS

BY
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NEW CONCEPTS OF THE PANAMANIAN ORCHID FLORA

THE following new concepts became apparent in the course of the critical work undertaken by Mr. Paul H. Allen on the orchid flora of Panama.

Oakes-Amesia *C. Schweinfurth & P. H. Allen gen. nov.*

Divisio: Acrotonae. Tribus: Kerosphaereae. Series: Pleuranthae. Subtribus: Ornithocephaleae. Flores parvi. Perianthii partes liberae, late patentēs. Sepala ovata vel oblongo-ovata, mucronata. Petala sepalis majora, late cuneata, apice truncata vel retusa. Labellum medio profunde trilobatum, per medium longitudinaliter tubulo percursum. Columna brevis, supra in processum rostellarem superne dilatatum et trilobulatum extensa. Anthera perlonga, sigmoidea, supra abrupte semigloboso-concava. Pollinia quattuor, parva, stipiti perlongo affixa.

Herba pusilla, epiphytica, *Ornithocephalo* valde affinis. Caulis perbrevis, foliorum circulo omnino obtectus. Folia equitantia, late patentia, infra vaginis imbricantibus articulata. Inflorescentiae racemosae, axillares, pluriflorae, folia superantes.

Oakes-Amesia cryptantha C. Schweinfurth & P. H. Allen *sp. nov.*

Herba pusilla, epiphytica. Radices fibratae, pubescentes, numerosae. Caulis perbrevis, foliorum vaginis valde imbricatis omnino obtectus. Folia equitantia, vaginis articulata; laminae elliptico-lineares, acutae; vaginae conduplicatae. Inflorescentiae singulae vel tres, in foliorum superiorum axillis, racemosae, folia paulo excedentes. Flores parvi, cum segmentis liberis patentibus. Sepalum dorsale oblongo-ovatum, concavum, valde mucronatum. Sepala lateralibus oblique ovata, concava, valde mucronata. Petala triangulari-cuneata, abrupte et late truncata vel leviter retusa. Labellum medio profunde trilobatum, valde concavum cum lobis lateralibus et lobi medii lateribus erectis; lobi laterales late oblongi, apice rotundati; lobe medius expansus subquadrato-cuneatus, apice truncatus; discus per medium tubulo percursus et supra tubulum fascia papillosa ornatus. Columna brevis, apoda, supra geniculata, antice cum processu rostellari elongato trilobato. Anthera operculata, incumbens. Pollinia quattuor.

Plant epiphytic, small, up to 5 cm. high. Roots slender, fibrous, finely pubescent, numerous. Stem obscure, entirely enveloped by a circle of leaves. Leaves equitant, coriaceous, about six or more in number, articulated to imbricating sheaths; blades elliptic-linear, acute, 1.8–3.9 cm. long, 3.5–4.5 mm. wide; sheaths conduplicate, short, 6–8 mm. long. Inflorescences one to three, springing from the upper axils, racemose, erect or arcuate, about 5.5 cm. long, apparently 9-flowered, with the short peduncle and lightly fractiflex rachis narrowly bialate. Bracts spreading, triangular-lanceolate to ovate-lanceolate, long-acuminate, amplexicaul, dorsally carinate as an extension of the bialate rachis. Flowers small, white, the lip being dark green marked with white. Perianth

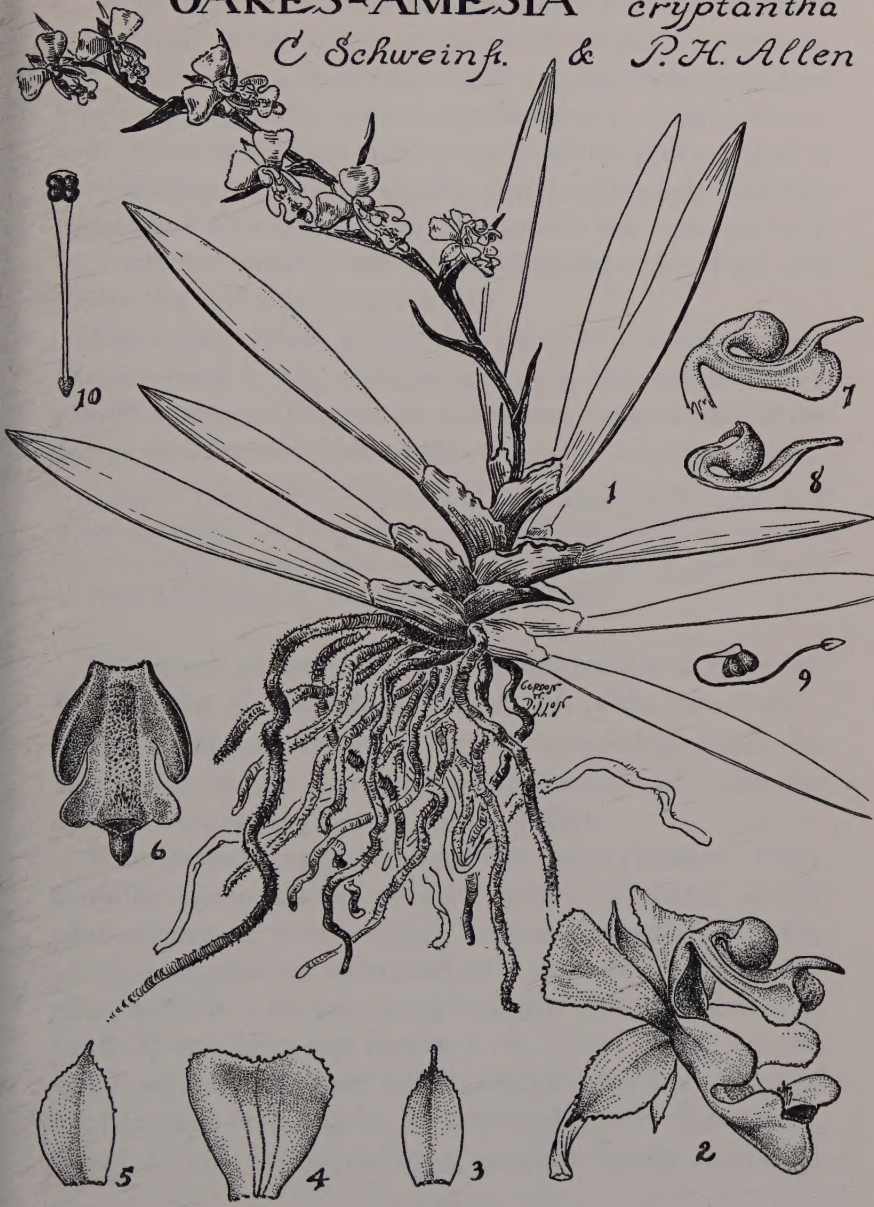
parts widely spreading. Dorsal sepal oblong-ovate, concave, mucronate, 1-nerved, dorsally lightly carinate, the upper margins being minutely erose, about 2.7 mm. long and 1.25 mm. wide when expanded. Lateral sepals obliquely ovate, concave, mucronate, 1-nerved, dorsally carinate, with the upper margins minutely erose, about 2.9 mm. long and 1.5 mm. wide when expanded. Petals triangular-cuneate, abruptly and broadly truncate to lightly retuse at the apex with the upper margins minutely erose, 3-nerved through the center, about 3 mm. long and subequally wide above. Lip complex, deeply 3-lobed in the middle, concave with the lateral lobes and the sides of the mid-lobe erect in natural position, about 3.5 mm. long, the longitudinal center traversed by a narrow tube (with opening at the apex), above which is a linear-oblong fleshy papillose band beset with hairs at the apex; lateral lobes obliquely and broadly oblong with a rounded apex, porrect; mid-lobe subquadrate-cuneate when expanded with the opening of the tube in the center of the truncate apex and with a high fleshy keel on the under surface forming a prominent mucro when viewed from above. Column short, right-angled-geniculate near the middle, about 1.5 mm. high; from the sinus of the angle in front extends a porrect elongate rostellar process about 3 mm. long which is dilated above and prominently mucronate (thus 3-lobulate), the dilated portion on each side being decurved and forming a rounded semiobovate lobule; anther imbedded on the rostellar process (i.e. incumbent), elongate, abruptly sigmoid and semiglobose-dilated above; pollinia four, small, affixed to the apex of an elongate triangular-linear stipe.

At first sight *Allen & Allen 4196* appeared to represent a typical member of the well-marked genus *Ornithocephalus*. An examination of the flowers, however, revealed characters which could not be reconciled with

EXPLANATION OF THE ILLUSTRATION

PLATE X. OAKES-AMESIA CRYPTANTHA *C. Schweinfurth* & *P. H. Allen*. 1, plant, twice natural size. 2, flower, from side, six and two thirds times natural size. 3, dorsal sepal, six and two thirds times natural size. 4, petal, six and two thirds times natural size. 5, lateral sepal, six and two thirds times natural size. 6, lip, from above, six and two thirds times natural size. 7, portion of column, with rostellar process and anther in place, from side, six and two thirds times natural size. 8, anther with pollinia, natural position, from side, six and two thirds times natural size. 9, pollinia with stipe and viscid disc, natural position, from side, six and two thirds times natural size. 10, pollinia with stipe and viscid disc, extended, from above, six and two thirds times natural size. *Drawn by* GORDON W. DILLON.

OAKES-AMEZIA *cryptantha*
C Schweinf. & P.H. Allen



our present conception of that genus. After prolonged study, it has seemed to us the wiser course to recognize this collection as constituting a new genus.

A marked point of difference from *Ornithocephalus* is the sharply 3-lobed lip provided with a central longitudinal tube (open in front) and an overlying fleshy papillose linear-oblong band which is pubescent in front. Moreover, there is a stout trilobulate rostellar process that is very different from the slender simple attenuate rostellar process of *Ornithocephalus*. In profile the column with its rostellar process and anther suggests the head and folded legs of a praying mantis.

The name *Oakes-Amesia* was chosen to commemorate the foremost living orchidologist who has recently completed a term of fifty years as teacher, mentor and benefactor of Harvard University.

PANAMA: Prov. of Coel , summit of Cerro Pajita, hills north of El Valle de Anton, at 1000–1200 meters altitude, epiphyte on small trees in dwarf cloud forest, January 7, 1947, *Paul H. and Dorothy O. Allen 4196* (TYPE in Herb. Ames No. 64880).

Gongora armeniaca (*Lindl.*) *Reichenbach filius* var. **bicornuta** *C. Schweinfurth & P. H. Allen* var. nov.

Herba florum colore et labelli hypochilio antice bicornuto et medio supra conspicue dentato et columnae apice utrinque angulato a specie differt.

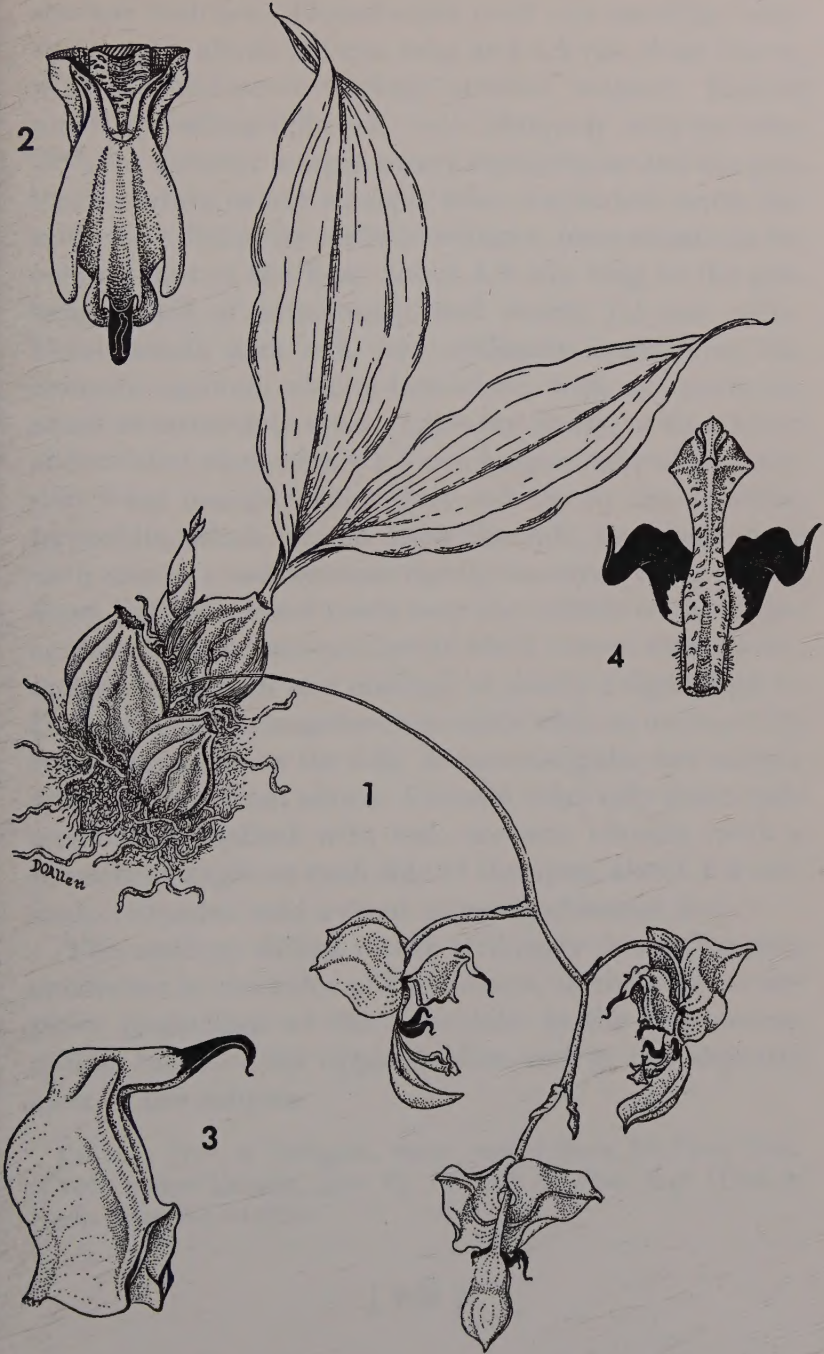
Plant rather small, with an abbreviated rhizome. Pseudobulbs approximate, broadly ovoid, bifoliate, deeply plurisulcate, 2–3 cm. high. Leaves lanceolate-elliptic, acuminate, shortly narrowed to a subpetiolate base, plicate, with 3–5 nerves conspicuously exerted beneath, up to 12 cm. long and nearly 4 cm. wide. Scape lateral, basal, pendent, filiform below, slightly thickened above, very loosely few- (up to 5-) flowered in the upper part, about 13 cm. long; rachis of raceme lightly fractiflex,

EXPLANATION OF THE ILLUSTRATION

PLATE XI. *GONGORA ARMENIACA* var. *BICORNUTA* C. Schweinfurth & P. H. Allen. 1, plant, natural position, about natural size. 2, lip, natural position, from above, nearly three times natural size. 3, lip, natural position, from side, three times natural size. 4, column (with foot) and petals, natural position, about twice natural size.

Drawn by DOROTHY O. ALLEN

PLATE XI



nearly 5 cm. long. Sepals pale cream-color, minutely spotted with red. Dorsal sepal erect and cucullate, obovate, acute, about 1.8 cm. long and 1.2 cm. wide above, with the mid-nerve slightly carinate without. Lateral sepals spreading-reflexed, very obliquely elliptic-ovate with the anterior margin nearly semicircular and the posterior margin nearly straight when expanded, acute, the mid-nerve distinctly carinate without, long-adnate to the column-foot at the base, about 1.9 cm. long to the posterior point of attachment and nearly 1.5 cm. wide. Petals small, dark red, very obliquely inserted on the column, sigmoid, oblong-lanceolate, with an upcurved, acute or acuminate apex. Lip very fleshy, with a broad abbreviated claw, about 1.5 cm. long in natural position, rich waxy orange with a dark red tip to the epichile; hypochile, when viewed from the side, terminating on each side in a conspicuous lightly incurved horn, with a short but prominent tooth near the middle of the upper surface, subquadrate-pandurate when viewed from above; epichile upcurved and inserted at nearly a right angle to the hypochile, triangular-lanceolate with an uncinat tip when viewed from the side, linear-triangular and sulcate when viewed from above. Column relatively short, pale cream-color dotted with red, arcuate, clavate, with a prominent angle on each side of the apex, about 1.2 cm. long, extended into a stout sulcate pubescent foot.

This concept differs rather strikingly from *Gongora armeniaca* in the color of the flowers, in the cornute anterior projections of the hypochile, in the conspicuous middle tooth on its upper surface and in the angulate apex of the column.

PANAMA: Prov. of Veraguas, region west of Santa Fé, Cerro Tute, at 1000 meters altitude, June 24, 1947, P. H. Allen 4648 (TYPE in Herb. Ames No. 64263).

Gongora maculata Lindley var. **latibasis** C. Schweinfurth & P. H. Allen var. nov.

Herba floribus majoribus atque labelli hypochilio perlatato basi triangulari nec vere cornuto a specie differt.

Vegetative portions not seen. Pseudobulbs said to be subglobose, about 5 cm. in diameter, deeply sulcate. Leaves about 30 cm. long and 10 cm. wide, grayish green. Flowers (of which I have examined two) somewhat larger than those of *Gongora maculata*; buds tawny yellow; sepals dark blood-red; petals and column green with small red spots. Dorsal sepal broadly ovate-elliptic, acute, adnate to the middle of the column, lightly concave, with revolute margins, about 2.3 cm. long and 1.3 cm. wide when expanded. Lateral sepals larger, wide-spreading, obliquely triangular-ovate, acuminate, with revolute margins, the base being long-adnate to the column-foot, about 3 cm. long to the posterior point of insertion and 2 cm. wide. Petals relatively small (as in the genus), long-adnate to the column, the free portion being sigmoid, linear, acute, strongly incurved in natural position. Lip very fleshy, about 2.2 cm. long, adnate to the abbreviated free apex of the column-foot; hypochile (when viewed from above) subquadrate-triangular with a very broad subbasal portion which is destitute of horns, the anterior portion in front of the broad rounded sinus produced on each side into an erect bristle; epichile narrowly triangular and acuminate when viewed from above, laterally compressed and broadly triangular with a recurved apex when viewed from the side. Column arcuate, slightly enlarged above, about 2 cm. long.

By reason of its large size, this concept appears to be quite distinct from the other members of the genus *Gongora* which have been examined. It is unusual, among the other members of its alliance, in having a lip with a very broad triangular basal portion which lacks any true horns.

PANAMA: Canal Zone, about 2 miles west of Gatun Dam, at about 184 meters altitude, April 1, 1939 (blooming time), *Butcher s.n.* (TYPE in Herb. Ames No. 64244).

***Brassia Allenii* L. O. Williams ex C. Schweinfurth**
sp. nov.

Herba epiphytica, robusta, sine pseudobulbo caulique. Vaginarum foliiferarum fasciculus flabelliformis. Vaginae conduplicatae, imbricatae. Folia oblanceolata vel oblongo-lanceolata vel lineari-oblanceolata, oblique acuta. Inflorescentia lateralis, axillaris, foliis brevior, laxe pauciflora. Flores pro genere parvi. Sepala similia, lineari-lanceolata, supra longe attenuata. Petala quam sepala breviora et latiora, oblique et anguste lanceolata, longe attenuata. Labellum ovatum vel suborbiculari-ovatum, antice abrupte in apicem anguste triangularem productum; discus callis duobus brevibus carnosus apice in dentem productis ornatus. Columna abbreviata, crassa.

Plant epiphytic, more or less robust. Roots fibrous, glabrous, stout, numerous. Stems or pseudobulbs lacking, their place being taken by a flabellate cluster of leaf-bearing sheaths. Leaf-sheaths several to numerous, imbricating, conduplicate, nervose, surrounded on each side by abbreviated often non-leaf-bearing sheaths. Leaves oblanceolate to oblong-lanceolate or linear-oblanceolate, very obliquely acute with one side of the apex much surpassing the other, gradually narrowed to a complicate or conduplicate base, plicate, many-nerved with about seven to nine nerves prominently exerted beneath, commonly about 18.5–30 cm. long and 2.3–2.7 (rarely 3.8) cm. wide. Inflorescence in the axil of an upper leaf-sheath, loosely 6- to 7-flowered from near the base, distinctly shorter than the leaves, gently recurved. Floral bracts conspicuous, deeply concave, ovate, amplexicaul, acute or acuminate, scarious, many-nerved, slightly sur-

EXPLANATION OF THE ILLUSTRATION

PLATE XII. *BRASSIA ALLENII* L. O. Wms. ex C. Schweinfurth. 1, plant, natural position, about one half natural size. 2, flower, from front, about five sevenths natural size. 3, column and base of lip, from side, about twice natural size.

Drawn by DOROTHY O. ALLEN



passing the pedicellate ovary, the lower ones 1.9–2.7 cm. long. Flowers rather small for the genus, non-resupinate in natural position (i.e. with the lip uppermost). Dorsal sepal linear-lanceolate, long-attenuate with conduplicate upper portion, about 3.7 cm. long and 5 mm. wide below. Lateral sepals similar but apparently a little longer and narrower (sometimes slightly broader), about 4.3 cm. long and 4 mm. wide. Petals obliquely and narrowly lanceolate, long-attenuate above with conduplicate margins, about 3.3 cm. long and 6 mm. wide below. Lip ovate or suborbicular-ovate, with the lobulate anterior margins terminating abruptly in a more or less elongate triangular or linear-triangular mucro, subcordate at base, about 1.5–2.1 cm. long and 1.2–1.5 cm. wide near the base; disc at the base just in front of the column with a pair of short approximate fleshy keels which are deeply constricted in front forming a pair of conical complanate teeth. Column very short and stout, wingless, about 3 mm. high at the back.

This species is extremely variable both vegetatively and florally. The measurements of the most complete specimen, which has been taken as the type, are uniformly somewhat smaller than those of other collections. *Brassia Allenii* seems to be related to the Venezuelan *Brassia glumacea* Lindl., but differs in having a much stouter habit, in having the racemes markedly shorter than the leaves and in its apparently dissimilar lip.

This concept was first considered as new and was named by Dr. Louis O. Williams, but has remained undescribed until this time.

PANAMA: Prov. of Panama, summit of Cerro Campana near Campana, at about 1000 meters altitude, in cloud forest, October 2, 1947, Paul H. Allen 5150 (TYPE in Herb. Ames No. 64857); Prov. of Coclé, vicinity of El Valle, at 800–1000 meters altitude, sepals and petals dark reddish brown, lip yellow, fragrant, August 17, 1937, P. H. Allen

374; Prov. of Coclé, mountains beyond La Pintada, at 400–600 meters altitude, February 17, 1935, *A. A. Hunter & P. H. Allen* 592 (old fruit); Prov. of Coclé, region north of El Valle de Anton, vicinity of La Mesa, at about 1000 meters altitude, very common in dark wet forest of higher elevations, November 12, 1941, *P. H. Allen* 2830; same locality, Finca Muñoz, at 800–1000 meters altitude, Feb. 2, 1942, *P. H. Allen* 2922; same locality, at about 700–800 meters altitude (flowered by Mr. Elmer Ohlson, September 10, 1942), *P. H. Allen* 2963; Prov. of Coclé, “Loma del Tigre,” hills north of El Valle de Anton, at 1000 meters altitude, November 16, 1946, *P. H. Allen* 3804.

***Lockhartia amoena* Endres & Reichb.f. var. *triangulabia* (A. & S.) C. Schweinfurth & P. H. Allen**
comb. nov.

Lockhartia triangulabia A. & S. Sched. Orch. 8 (1925) 80.

In view of the great variability shown by the lip in the numerous collections of *Lockhartia amoena*, it appears to us that the concept described as *Lockhartia triangulabia* represents only an extreme form of the earlier species. We therefore propose the above combination.

NOMENCLATURAL CHANGES IN VENEZUELAN ORCHIDS

In conformity with our present view of regarding the concept *Ornithidium* Salisb. as being referable to the large and polymorphic genus *Maxillaria* Ruiz & Pav., the two following transfers become necessary.

***Maxillaria Jenischiana* (Reichb.f.) C. Schweinfurth**
comb. nov.

Ornithidium Jenischianum Reichenbach filius in Bonpl. 2 (1854) 18.

***Maxillaria sanguinolenta* (Lindl.) C. Schweinfurth**
comb. nov.

Ornithidium sanguinolentum Lindley Orch. Linden. (1846) 22, no. 117.

Ornithocephalus polyodon *Reichenbach filius* in *Linnaea* 41 (1876) 33.

Since this species, originally found in Ecuador, was described from two inflorescences only, it seems wise to append a more detailed description as afforded by a recent Peruvian collection consisting of three complete plants.

Plant rather large and stout for the genus, epiphytic, about 11–19 cm. tall. Stems abbreviated as in the genus, entirely concealed by a circle of nine to eleven crowded imbricating sheaths of the leaves. Leaf-sheaths conduplicate with a scarious band on the upper margin. Leaves elliptic-lanceolate to linear-lanceolate, more or less acuminate, usually lightly oblique above, somewhat narrowed to an obliquely articulated base, about 3 (outer blade) –16 cm. long, 0.85–1.4 cm. wide. Scapes lateral in the axils of leaf-sheaths, usually two to each plant, suberect or flexuous to arcuate, about 9.5–19.5 cm. long, entirely glandular-setulose (slightly so below), racemose above; peduncle short, 4 cm. or more long, with three or more remote, spreading, semiamplexicaul sheaths; raceme up to 14.5 cm. long, loose or subdense, several- (8) to many-flowered. Floral bracts spreading, suborbicular-ovate, semiamplexicaul, glandular-ciliolate. Flowers rather large for the genus, with membranaceous wide-spreading segments. Dorsal sepal deeply concave, suborbicular-obovate, broadly rounded at the apex, irregularly glandular-ciliate (especially on the lateral margins), rather densely glandular-setose on the outer surface, 1-nerved, about 6 mm. long and 4 mm. wide. Lateral sepals oblong-obovate, broadly rounded above, lightly concave, somewhat oblique, sparingly serrate, rather densely glandular-setose without, 1-nerved and dorsally keeled,

about 5.5 mm. long and 3.8 mm. or less wide. Petals cuneate-flabellate with recurved sides in natural position, oblong-obovate when expanded, broadly rounded at the apex, 1-nerved, about 5 mm. long, 3.5–4.2 mm. wide, 2- to 3-nerved. Lip deeply 3-lobed, shorter than the other segments in natural position, with saccate base, erect lateral lobes and recurved mid-lobe, when expanded about 6.5 mm. long and slightly wider across the base; lateral lobes small, divaricate, triangular-oblong, with a recurved convex apex; mid-lobe much larger, subquadrate-ovate when expanded, slightly dilated above and below, rather abruptly narrowed above to an acute tip, 7-nerved; disc with a transverse subelliptical pluridentate callus which extends as a toothed ridge from the base of the lateral lobes, continues in a curved line in front of the lateral lobes and is extended across the base of the mid-lobe. Column very small, clavate, with a reflexed linear rostellum.

In the Ames Herbarium there is a drawing of *Ornithocephalus polyodon* from the Reichenbach Herbarium consisting of two flowering racemes and a rather detailed floral analysis. The latter shows a close agreement with the flowers of the Peruvian collection, having similar oblong-obovate sepals with a broadly rounded apex. The petals are shown as sometimes broadly rounded and sometimes (as described) retuse at the apex. The lateral lobes of the lip (as drawn) appear to be subequal in size to the mid-lobe. The type description, as well as the Reichenbach drawing, shows that there is a toothed upper margin of the petals, a character which does not appear in our specimen.

ECUADOR: (TYPE).

PERU: Loreto, Río Mazán, at 100–125 meters altitude, February 1935, José M. Schunke 391.